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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,476	03/30/2004	Xiangyang Zhuang	CML01499M	4791
22917	7590	05/31/2005	EXAMINER	
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			HOM, SHICK C	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/813,476

Applicant(s)

ZHUANG ET AL.

Examiner

Shick C. Hom

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11-13 and 15 is/are rejected.
- 7) ☒ Claim(s) 6-10, 14 and 16-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 2666

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: in page 1 line 21 of the specification delete typo "abovementioned" and insert ---above mentioned---. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Roman (2003/0152136).

Regarding claim 11:

Roman discloses the method comprising the steps of:  
receiving a pilot sequence as part of an over-the air

Art Unit: 2666

transmission, wherein the pilot sequence is constructed from a set of Generalized Chirp-Like (GCL) sequences (see the abstract which recite the implementation of a wireless telecommunication system in the radio environment clearly anticipate the over-the air transmission, paragraphs 0041-0042 which recite the use chirp waveforms as "pilot signal," and paragraph 0053 which recite the use of the chip-like sequence clearly anticipate the GCL sequences); and utilizing the pilot sequence for at least one of the following: acquisition and tracking of timing and frequency synchronization, estimation and tracking of desired channels for subsequent demodulation and decoding, estimation and monitoring of characteristics of other channels for handoff purposes, and interference suppression (see claims 10-12 which recite the use of the pilot signal for rapid synchronization, timing, and demodulation, respectively).

Regarding claim 12:

Roman discloses wherein the step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first base unit the first pilot sequence, and wherein the step of assigning the second communication unit the second pilot sequence comprises the step of assigning a second base unit the second pilot sequence and wherein the step of receiving the pilot sequence comprises the step of receiving the

Art Unit: 2666

pilot sequence at a base unit (see paragraph 22 which recite establishing connection expeditiously where one base station calls the other and claim 9 which recite the base stations transmit and receive data amongst themselves clearly anticipate the base units and assigning the first and second pilot sequence to the first and second base unit, respectively).

Regarding claim 13:

Roman disclose wherein the step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first remote unit the first pilot sequence, and wherein the step of assigning the second communication unit the second pilot sequence comprises the step of assigning a second remote unit the second pilot sequence and wherein the step of receiving the pilot sequence comprises the step of receiving the pilot sequence at a remote unit (see claim 7 which recite the remote devices transmit and receive data amongst themselves).

Regarding claim 15:

Roman discloses a communication unit comprising: pilot channel circuitry for transmitting or receiving a pilot channel sequence, wherein the pilot channel sequence comprises a sequence unique to the communication unit and is constructed from a GCL sequence (see paragraphs 0041-0042 which recite transmitting and receiving chirp waveforms as "pilot signal" and

Art Unit: 2666

paragraph 0053 which recite the use of the chip-like sequence clearly anticipate pilot channel circuitry for transmitting or receiving a pilot channel sequence being the GCL sequences).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2666

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roman (2003/0152136) in view of Matsumoto (6,704,552).

For claims 1-4, Roman disclose a method described in paragraph 3 of this office action. Roman discloses all the subject matter of the claimed invention with the exception of a first and second communication unit being assigned a first and second pilot sequence, respectively, as in claims 1-4.

Regarding claims 2, 4:

Roman discloses wherein the step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first base unit the first pilot sequence (see paragraph 22 which recite establishing connection expeditiously where one base station calls the other).

Regarding claim 3:

Roman disclose wherein the step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first remote unit the first pilot sequence (see paragraph 0005 which recite information sent to devices spread over wide areas clearly anticipate the remote units).

Matsumoto from the same or similar fields of endeavor teach that it is known to provide wherein a first and second

Art Unit: 2666

communication unit being assigned a first and second pilot sequence, respectively (see col. 4 lines 4-22 which recite the first and second pilot signal of the first and second channel being output by the first and second despreaders of the radio communication unit, respectively). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide wherein a first and second communication unit being assigned a first and second pilot sequence, respectively, as taught by Matsumoto in the communications method of Roman. The first and second communication unit being assigned a first and second pilot sequence, respectively can be implemented by connecting radio communication unit of Matsumoto to the transmitter of Roman. The motivation for using the radio communication unit wherein a first and second communication unit are assigned a first and second pilot sequence, respectively as taught by Matsumoto in the communication method of Roman being that it provides more efficiency for the system since the system can align/realign signals at the receiving ends using the two pilot sequences rather than having to use a high accuracy oscillator that is expensive.



Art Unit: 2666

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roman (2003/0152136) and Matsumoto (6,704,552) in view of Popovic (6,804,307).

For claim 5, Roman and Matsumoto disclose a method described in paragraph 6 of this office action. Roman and Matsumoto disclose all the subject matter of the claimed invention with the exception of wherein the step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first antenna of a sector of the base station the first pilot sequence, and wherein the step of assigning the second communication unit the second pilot sequence comprises the step of assigning a second antenna of a sector of the base station the second pilot sequence as recited in claim 5.

Popovic from the same or similar fields of endeavor teach that it is known to provide wherein the step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first antenna of a sector of the base station the first pilot sequence, and wherein the step of assigning the second communication unit the second pilot sequence comprises the step of assigning a second antenna of a sector of the base station the second pilot sequence (see Fig.

Art Unit: 2666

2, the antennas 202-205 and col. 8 lines 5-20 which recite antenna 1 and antenna 2 transmitting pilot bits 303 and pilot bits 304, respectively). Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide wherein the step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first antenna of a sector of the base station the first pilot sequence, and wherein the step of assigning the second communication unit the second pilot sequence comprises the step of assigning a second antenna of a sector of the base station the second pilot sequence, as taught by Popovic in the communications method of Roman and Matsumoto. The step of assigning the first communication unit the first pilot sequence comprises the step of assigning a first antenna of a sector of the base station the first pilot sequence, and wherein the step of assigning the second communication unit the second pilot sequence comprises the step of assigning a second antenna of a sector of the base station the second pilot sequence can be implemented by the connecting a second antenna and assigning a sector of the base station a second pilot sequence of to the base station of Roman and Matsumoto. The motivation for providing wherein the step of assigning the first communication unit the first pilot sequence comprises the step

Art Unit: 2666

of assigning a first antenna of a sector of the base station the first pilot sequence, and wherein the step of assigning the second communication unit the second pilot sequence comprises the step of assigning a second antenna of a sector of the base station the second pilot sequence as taught by Popovic in the communication method of Roman and Matsumoto being that it provides more efficiency and reliability for the system since the system can use a second antenna to transmit to a sector of the base station for better performance or when the first antenna fails, respectively.

#### ***Allowable Subject Matter***

8. Claims 6-10, 14, and 16-18 would be allowable if rewritten to overcome the objections above and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rozanski et al. disclose method and apparatus for mobile assisted handoff in a communication system.

Linde et al. disclose multi-dimensional spread spectrum modem.

Art Unit: 2666

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick C. Hom whose telephone number is 571-272-3173. The examiner can normally be reached on Monday to Friday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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*Seema S. Rao*  
SEEMA S. RAO 5/25/05  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800